

March 17th 2008, J. Wresnik

Comparison of uniformsky schedules with different optimization options and different network sizes

Specifications:

schedules: st16uni_45_9_230X_0_0
st32uni_45_9_230X_0_0

software: OCCAM Kalman

clk: ASD 1e-14 @ 50 min, random walk + integrated random walk

zwd: Vienna turbulence (standard)

wn: $4/\sqrt{2}$ ps per station

zwd: 0.7

grd: 0.5

networks:

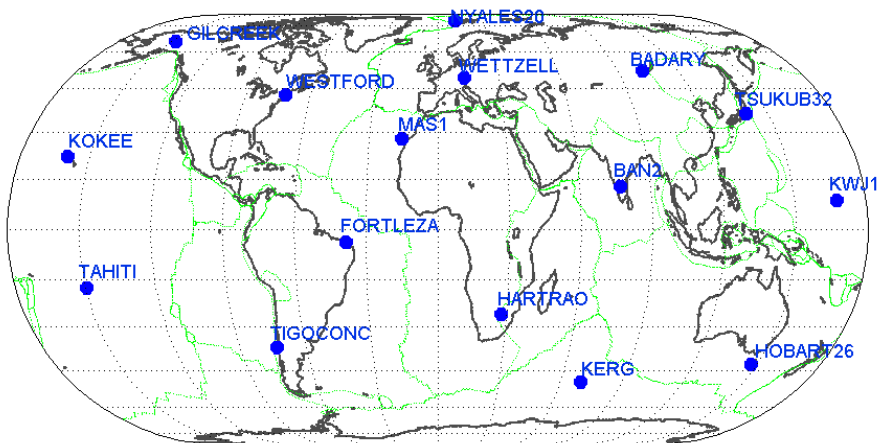


Figure 1: 16 station network

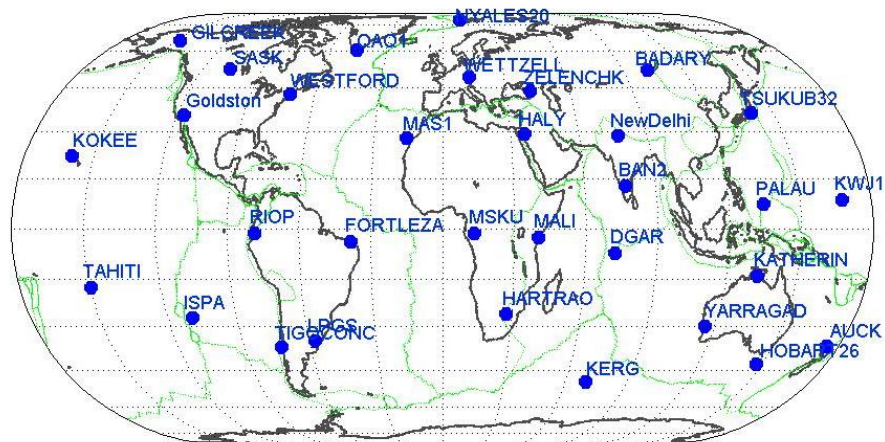


Figure 2: 32 station network

The baseline length repeatabilities for the 32 station network shows a bad behavior for the all baselines with the station RIOP. The Cn value of RIOP used for the simulation of the turbulence atmospheres is Cn:2,47 and the wind speed is very low. I think it is due to the combination of high Cn values and low wind speeds, that we get worse repeatabilities for all the baselines with this site.

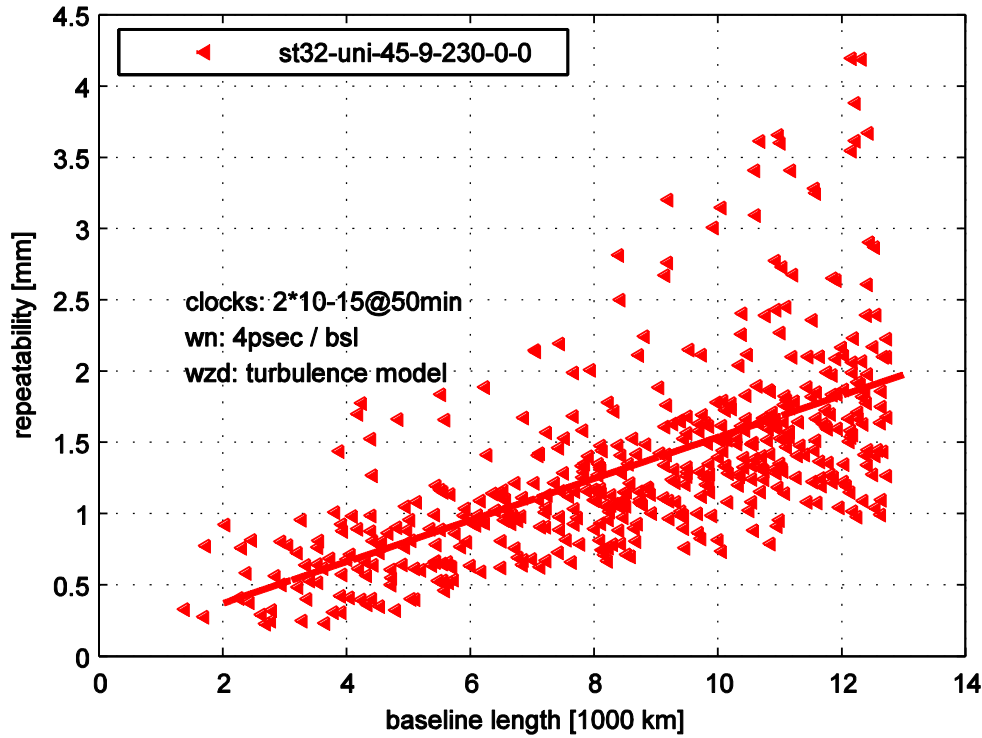


Figure 3: Baseline length repeatabilities for the schedule st32_uni_45_9_230X_0_0

The comparison shows that the performance of the network does not decrease if we add more stations to the network. This is due to the uniform sky scheduling strategy, because adding 16 stations to the 16 station network doesn't change the number of observations at the stations.

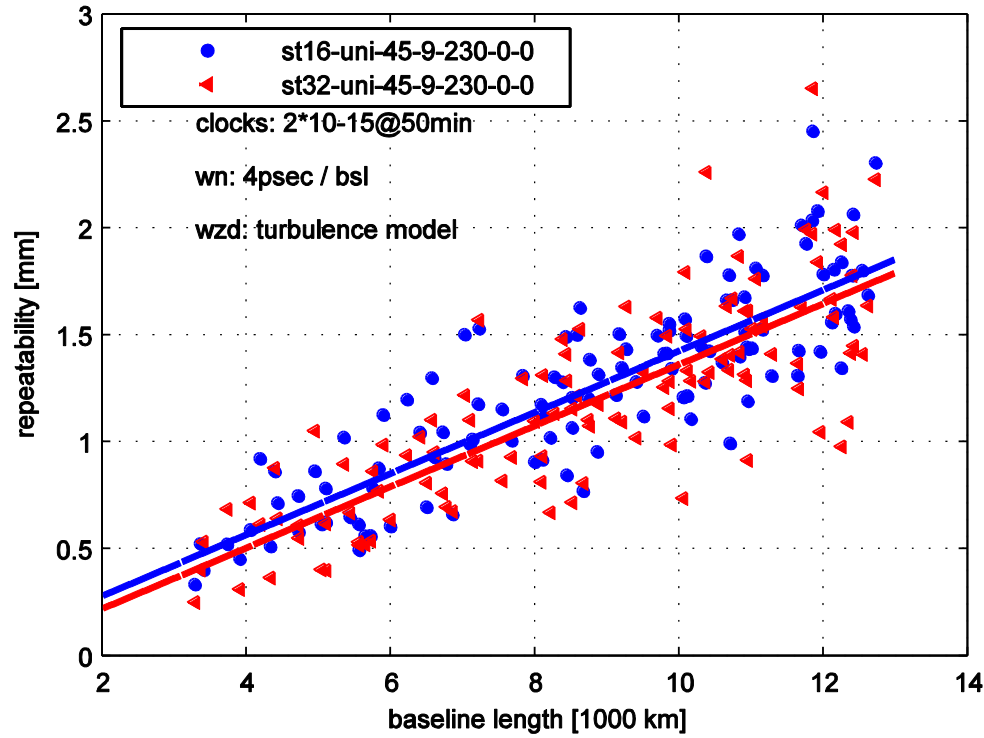


Figure 4: Comparison between the baseline length repeatabilities for 16 and 32 station network.

The rms values of the 3D station position at the station also show the highest value for the station RIOP. The median of the rms of the 3D station position is 1.3 mm and compared to the performance of the 16 station network with 1.28mm the same for the whole network.

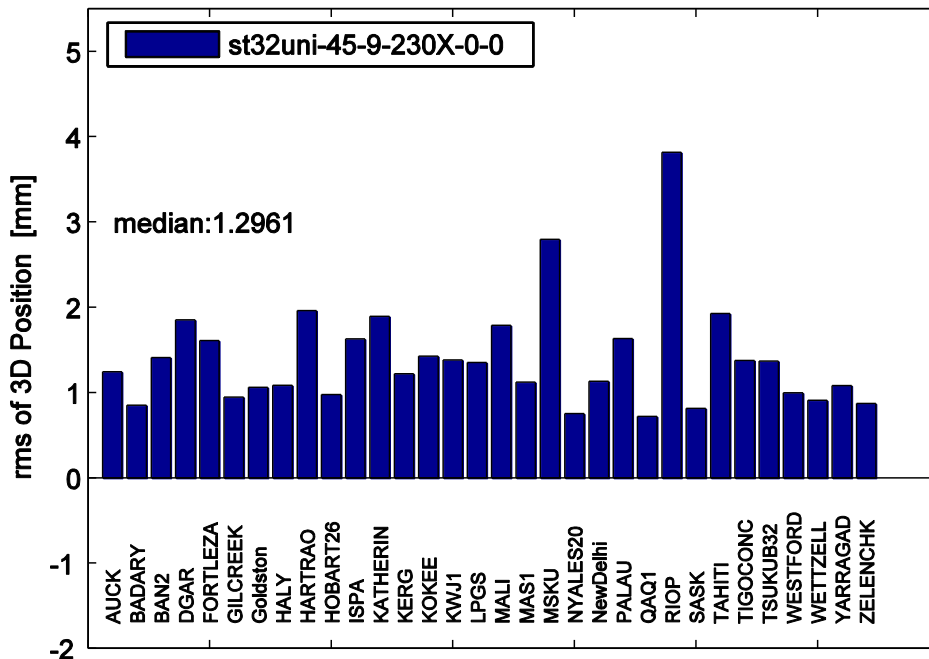


Figure 5: Plot of the rms values of the 3D station position

Table1: Median of the 3D rms of the station position for the different schedules.

schedule	Median 3D rms
st16uni_45_9_230	1.28
st32uni_45_9_230	1.30